Amendment is entered in view of RCE.
/William Cheung/

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1 (Currently Amended): Process for the catalytic polymerization of olefins comprising the steps of;

i) a first polymerization in a first reactor, wherein olefins are polymerized with a particulate catalyst, hydrogen and optional a comonomer in a fluidum of an inert low boiling hydrocarbon medium into an reaction mixture comprising polymerized olefins; and

ii) a second polymerization in a second reactor, wherein the polymerized olefins are further polymerized in a fluidized bed and in a moving bed by settled polymeric particles moving downwardly in a more or less plug stream under such conditions that the residence time in the fluidized bed and the residence time in the moving bed are independently controlled, wherein the residence time in the moving bed is controlled by controlling the outflow rate of particles from the moving bed.

Claim 2 (Original): Process according to claim 1, wherein the inert low boiling hydrocarbon medium comprises propane, butane, isobutane, pentane, hexane, heptane, octane, cyclohexane or cycloheptane.

Claim 3 (Previously Presented): Process according to claim 1, wherein the first polymerization is carried out in a liquid phase.

Claim 4 (Previously Presented): Process according to claim 1, wherein the first polymerization is carried out at a temperature of about 75° to 110°C. and a pressure of 40-90 bar.

Claim 5 (Original): Process according to claim 1, wherein the first polymerization of olefins is carried out under supercritical conditions, wherein the

polymerization temperature and pressure are above the corresponding critical points of the mixture formed by the olefins, catalyst, hydrogen, optional comonomer and fluidum of inert low boiling hydrocarbon medium and the polymerization temperature is below the melting point of the formed polymerized olefins.

Claim 6 (Original): Process according to claim 5, wherein the inert low boiling hydrocarbon is propane.

Claim 7 (Previously Presented): Process according to claim 5, wherein the first polymerization is carried out at a temperature of about 850°-110°C. and a pressure of 60-90 bar.

Claim 8 (Previously Presented): Process according to claim 1, wherein after the first polymerization at least part of the hydrogen, unreacted reactants and inert low boiling hydrocarbon medium are removed from the reaction mixture.

Claim 9 (Previously Presented): Process according to claim 8, wherein at least part of the hydrogen and the inert low boiling hydrocarbon are removed from the polymerized reaction mixture by flashing.

Claims 10 and 11 (Cancelled).

Claim 12 (Previously Presented): Process according to claim 1, wherein the moving bed is separated from the fluidized bed by a separation fluidum.

Claim 13 (Original): Process according to claim 12, wherein the separation fluidum is supplied to the moving bed.

Claim 14 (Previously Presented): Process according to claim 12, wherein the separation fluidum is a gas or a liquid and selected from the group comprising an inert gas or

liquid, such as nitrogen, C_1-C_{12}-alkane or olefins such as C_2-C_{12}-alkylene, or mixtures thereof.

Claim 15 (Original): Process according to claim 14, wherein the separation fluidum is a liquid evaporating under the residing polymerization conditions.

Claim 16 (Previously Presented): Process according to claim 13, wherein liquid olefins are added as separation fluidum such that the polymerization in the moving bed is a condensed mode polymerization.

Claim 17 (Previously Presented): Process according to claim 1, wherein liquid olefins are added to the fluidized bed such that the polymerization in the fluidized bed is in a condensed mode polymerization.

Claim 18 (Previously Presented): Process according to claim 12, wherein the separation fluidum comprises a polymerization monomer or comonomer, or mixture thereof.

Claim 19 (Previously Presented): Process according to claim 1 further comprising a third polymerization carried out in a third reactor.

Claim 20 (Original): Process according to claim 19, wherein the third reactor is a gas phase reactor.

Claim 21 (Previously Presented): Process according to claim 19, wherein in the third reactor

the polymerized olefins are further polymerized in a fluidized bed and in a moving bed such that the residence time in the fluidized bed and the residence time in the moving bed are independently controlled.

Claim 22 (Previously Presented): Process according to claim 1 comprising a pre-polymerization step.

Claim 23 (Currently Amended): Reactor system for the catalytical polymerization of olefins comprising a first polymerization reactor for carrying out the first polymerization, which first reactor comprises inlets for olefins, catalyst, hydrogen, optional comonomer, and inert low boiling hydrocarbon medium, the first reactor further comprises a product outlet for a reaction mixture comprising polymerized olefins; and wherein the product outlet of the first reactor is connected to an inlet of a second reactor for carrying out the second polymerization, which second reactor comprises a reactant inlet, a fluidized bed unit, a moving bed unit and a product outlet, wherein the fluidized bed unit comprises means for maintaining a fluidized bed in the fluidized bed unit, the moving bed unit is provided with an inlet directly connected to the fluidized bed unit such that the residence time in the fluidized bed unit and the residence time in the moving bed unit are independently controlled, and the outlet of the moving bed unit is provided with control means for controlling the outflow rate of particles from the moving bed unit.

Claim 24 (Original): Reactor system according to claim 23, wherein the first polymerization reactor comprises a loop reactor.

Claim 25 (Original): Reactor system according to claim 24, wherein the loop reactor is adapted to work under supercritical conditions.

Claim 26 (Previously Presented): Reactor system according to claim 23, wherein the product outlet of the first reactor is connected to removal means for removing hydrogen, unreacted reactants and inert low boiling hydrocarbon medium, and wherein the removal means comprise an outlet for polymerized olefins, which outlet is connected to the inlet of the second reactor.

Claim 27 (Previously Presented): Reactor system according to claim 26, wherein the removal means for removing hydrogen, unreacted reactants and inert low boiling

hydrocarbon medium are flashing means for separating the polymerized olefins from the inert low boiling hydrocarbon medium, unreacted reactants and hydrogen.

Claim 28 (Previously Presented): Reactor system according to claim 23, wherein the inlet of the moving bed unit is arranged in the fluidized bed unit.

Claim 29 (Previously Presented): Reactor system according to claim 23, wherein the outlet of the moving bed unit is connected to the fluidized bed unit.

Claim 30 (Previously Presented): Reactor system according to claim 23, wherein the moving bed unit is arranged in, around, adjacent to the fluidized bed unit.

Claim 31 (Previously Presented): Reactor system according to claim 23, wherein the moving bed unit is provided with means for supplying a separation fluidum.

Claim 32 (Previously Presented): Reactor system according to claim 23, wherein the inlet of the moving bed unit is provided with a diverging section

Claim 33 (Cancelled).

Claim 34 (Previously Presented): Reactor system according to claim 23, further comprising a pre-polymerisation unit connected to the catalyst inlet of the first polymerization reactor.

Claim 35 (Previously Presented): Reactor system according to claim 23, comprising a third reactor for carrying out a third polymerization and connected to the second reactor.

Claim 36 (Original): Reactor system according to claim 35, wherein the third reactor is a gas phase reactor.

Claim 37 (Original): Reactor system according to claim 35, wherein the third reactor comprises a reactant inlet, a fluidized bed unit, a moving bed unit and a product outlet, wherein the fluidized bed unit comprises means for maintaining a fluidized bed in the fluidized bed unit and wherein the moving bed unit is provided with an inlet directly connected to the fluidized bed unit such that the residence time in the fluidized bed unit and the residence time in the moving bed unit are independently controlled.

Claim 38 (Previously Presented): Reactor system according to claim 23 comprising a pre-polymerisation reactor.

Claims 39-41 (Cancelled).

Claim 42 (New): Reactor system according to claim 23, wherein the control means is a valve.